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HOGAN, MARY C	

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9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/858,235	SINCLAIR, ANDREW	
	Examiner	Art Unit	
	Mary C Hogan	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been examined.

2. **Claims 1-51** have been examined and rejected.

Claim Objections

3. **Claims 2,5,7,9,18,20,28,30 and 40** are objected to because of the following informalities. Appropriate correction is required.

4. **Claims 2,5,9,18 and 30:** "utilise" and "characterise" should be changed to read "utilize" and "characterize".

5. **Claims 7 and 28** recite "...a completion condition, at the least some of said completion conditions comprising...". From this language, it is unclear if there is only one completion condition or a plurality of completion conditions.

6. **Claim 9** also recites "said determined step size", however, there is no mention of determining a step size in the prior claim language.

7. **Claims 20 and 40** are recite determining whether "...the completion condition associated with each said process has been fulfilled" whereas the claim language of the claims that Claims 20 and 40 are dependent upon state similar language except recite "continuation" condition instead of "completion condition". It is unclear as to whether the completion condition and continuation are the same or different conditions in the system.

Claim Rejections - 35 USC § 112

8. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claim 21** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. **Claim 21** recites "in accordance with any preceding claim", making the claim vague and indefinite since it is unclear as to which specific claims this claim is dependent on. Further, if this claim, in the future, is placed in condition for allowance and all previous claims are cancelled, making it Claim 1, it would be unclear as to what is specifically being claimed.

Claim Interpretation

11. **Claims 7 and 28** recite "...a completion condition, at the least some of said completion conditions comprising...". From this language, it is unclear if there is only one completion condition or a plurality of completion conditions. This claim was interpreted as being directed to one completion condition.

12. **Claim 9** also "said determined step size", however, there is no mention of determining a step size in the prior claim language. It was determined that this "determined step size" refers to the step size used in simulating the process.

13. **Claims 10 and 31** recite "utility type data". The specification states that "many steps involve the use of utilities generated on site, such as e.g. purified water, water injection, clean steam, etc...", **(page 6, lines 4-9)**. From this explanation, the claim was interpreted as if "utility type data" corresponds to data about raw materials needed for the manufacturing process since the specification gives water as an example and water is a raw material.

14. **Claims 20 and 40** are recite determining whether "...the completion condition associated with each said process has been fulfilled" whereas the claim language of the claims that 20 and 40 are dependent upon state similar language except recite "continuation" condition instead of "completion condition". It is unclear as to whether the completion condition and continuation are the same or different conditions in the system. In this instance, the claim language of Claims 20 and 40 were interpreted to follow the claim language of the claims they depended upon, therefore, "completion condition" in Claims 20 and 40 was taken to mean "continuation condition".

15. **Claims 43 and 46** recite "calculating the sum of the greater of the greatest time of use of items of equipment utilized in processing said batches and minimum possible processing times for processing said batch in accordance with said model data for said items of equipment". Referring to this, the specification states that the time required to process a batch is estimated by "determining the sum for each item of equipment which is required to process the batch...or, the estimated minimum time for the item of equipment to process the new batch" **(specification, page 55, lines 6-17)**. From the explanation in the spec, the claim was interpreted to mean that the estimate could be either the sum of all the items of equipment used to process the batch **or** the minimum time for the item of equipment to process the new batch.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. **Claims 1-6, 9,18,21-27,30,38,41-49,51** are rejected under 35 U.S.C. 102(b) as being anticipated by Mazziotti et al (Mazziotti et al, "Creating a Flexible, Simulation-Based Finite Scheduling Tool", Proceedings of the 1997 Winter Simulation Conference, pages 853-860, December 7-10, 1997, Atlanta, Georgia), herein referred to as **Mazziotti**.

18. As to **Claims 1 and 22**, **Mazziotti** teaches: a method of simulating an industrial process comprising the steps of:

storing model data indicative of a plurality of processes involving a number of items of equipment to be used in an industrial process to be simulated **(Figure 1 and page 854, column 2, paragraph 2, sentence 1)**;

determining scheduling data for initiating batches against which said processes are to be simulated **(page 858, section 5,1, sentence 2)**; and

generating output data indicative of a simulation of an industrial process utilizing said stored model data and said scheduling data **(Figure 1, "System Performance Statistics", "Dispatch Lists" and "Predicted Order Completion Times")**,

characterized in that that said determination of scheduling data comprises the steps of:

determining a minimum possible processing time for each item of equipment involved in simulated processing of an initiated batch in accordance with said model data **(page 856, section 3.2.2, sentence 4)**;

determining for batches currently being processed the greatest time of use of items of equipment utilized in processing said batches **(page 856, section 3.2.2, sentences 1-3)**; and

generating scheduling data for scheduling the initiation of the next batch after said initiated batch **(page 858, column 1, section 4, paragraph 2, sentences 1 and 2 and paragraph 3, sentence 1)**, said scheduling data being such to cause the time between an initiated batch and said next batch within said simulation to be equal to the greater of the maximum of said minimum process times for said items of

equipment and said greatest time of use for said items of equipment **(Figure 1, "at what time", "Resources/Resource Groups", "Processing Times", page 856, paragraph 3.1.3 and paragraph 3.2.2)** wherein "at what time" is the time at which a next process is started, and the input of the setup/changeover times of a resource as well as the processing time for each product's operations are all inputs to the simulation which will schedule the initiation of batches based on the minimum process time of equipment in use and the greatest time of use of equipment which is the processing time plus the setup/changeover time since the equipment cannot be used to initiate the next batch until the equipment has been cleaned and set up again for the next process. The maximum of these two times will have to be used since the equipment cannot be used during these times.

19. As to **Claims 2 and 23, Mazziotti** teaches: wherein said determination of the greatest time of use of an item of equipment utilised in processing comprises the steps of:

storing in association with each item of equipment to be simulated data indicative of the time of use of said item of equipment for a batch previously processed by said item of equipment; and determining as the greatest time of use the greatest time of use of said stored times of use **(page 856, section 3.2.2 and Table 3)**.

20. As to **Claims 3 and 24, Mazziotti** teaches: wherein said determining of the greatest time of use of an item of equipment further comprises for each of the said items of equipment the steps of:

determining whether an item of equipment is in use; and if an item of equipment is in use determining the total time the item of equipment has been in use for a current batch; and if an item of equipment is no longer in use storing said total time in use as said time in use for said equipment **(page 856, section 3,2,2 and Table 3)**.

21. As to **Claims 4 and 25, Mazziotti** teaches: wherein each of said items of equipment is associated with a number of processes **(page 855, column 1, paragraph 3)** wherein said determination of whether an item of equipment is in use comprises determining whether any of said processes associated with said item of equipment is currently being simulated **(page 855, column 1, sentences 1 and 2)**.

22. As to **Claims 5 and 26, Mazziotti** teaches: wherein said determining of a minimum possible processing time of an initiated batch comprises the step of storing in association with each batch to be initiated data indicative of the greatest of said minimum possible processing times **(page 856, section 3.2.2)**; and said generation step comprises utilising said data to generate scheduling data **(page 858, section 5, paragraph 1)**.

23. As to **Claims 6 and 27, Mazziotti** teaches: wherein said determination of a minimum possible processing time comprises the steps of:

associating with a batch to be initiated data to be indicative of the items of equipment to be utilised in simulated processing of said batch **(page 856, section 3.2.1, sentences 1-3)**; and

determining said minimum possible processing times for each item of equipment associated with said batch **(page 856, section 3.2.2)**.

24. As to **Claims 9 and 30, Mazziotti** teaches: a method of simulating an industrial process comprising the steps of:

storing model data indicative of a plurality of processes involving a number of items of equipment to be used in an industrial process to be simulated **(Figure 1 and page 854, column 2, paragraph 2, sentence 1)**;

determining a time increment to be used with said model data **(page 858, section 5, "daily" and "long range" time increments)**; and

generating output data indicative of a step within a simulation of an industrial process utilizing said stored model data and said determined step size **(Figure 1, "Scheduling Algorithms and Processing Rules", page 859, Summary, sentence 4),** characterized in that said storage step comprises the step of storing rate data in relation to at least some of said processes **(page 854, column 2, paragraph 2, line 1)**, and

that said determination step comprises for each step in a simulation; the steps of:

determining weather any process of said plurality of processes to be simulated is associated with rate data **(Figure 1, "Processing times", page 856, section 3.2.2)**;

determining the minimum time increment required to complete any of the processes currently being simulated **(page 857, column 1, last sentence-column 2, first sentence)**; and

selecting as a step size for generating output data a default step size, if at least one process associated with rate data is to be simulated and said default step size is smaller than said determined minimum time increment **(page 859, Summary, sentence 4)**, and selecting as said step size said determined minimum time increment if no process to be simulated is associated with rate data or said default step size is greater than said determined minimum time increment **(page 859, Summary, sentence 4)** wherein the step size in the simulation software can be chosen by the user. The user will want to make the step size as small as possible in order to obtain the proper data. Therefore, it would be obvious to choose the step size to be the smaller of the two numbers, in this case, it would be the smaller of the default step size and the minimum time increment.

25. As to **Claims 18 and 38, Mazziotti** teaches: a method of simulating an industrial process comprising the steps of:

storing model data indicative of a plurality of processes involving a number of items of equipment to be used in an industrial process to be simulated **(Figure 1 and page 854, column 2, paragraph 2, sentence 1)**; and

generating output data indicative of a simulation of an industrial process utilizing said stored model data **(Figure 1, "System Performance Statistics", "Dispatch Lists" and "Predicted Order Completion Times")**, characterised in that said storage step comprises storing in association with at least some of said plurality of processes, data indicative of a continuation condition **(page 856, section 3.1.3, sentence 3**, "from product to product"), and said generation of output data comprises for each step in a simulation, the steps of:

determining which of said plurality of processes are to be simulated in said step of said simulation **(page 854,section 3.1.1**, first sentence);

determining for the processes to be simulated associated with data indicative of a continuation condition whether output data generated for the previous step in said simulation fulfils the continuation condition defined by said data **(page 856, section 3.1.1, sentences 3-5)** wherein the product continues from one process to another; and

if a continuation condition for a process being simulated is not fulfilled simulating a delay in the continued processing of said process **(page 856, section 3.1.1, sentences 3-5)** wherein the setup time of the process is adjusted based on the set up time necessary to be ready to process the next piece of equipment..

26. As to **Claim 21**, **Mazziotti** teaches: a method of performing an industrial process comprising the steps of:

simulating an industrial process in accordance with any preceding claim to determine apparatus required to perform a process **(Figure 1 and page 858, section 5, first paragraph)**;

providing apparatus corresponding to said items of equipment simulated **(Figure 1 and page 858, section 5, first paragraph)**; and

utilizing said apparatus to perform said industrial process simulated **(page 858, section 5.1, second sentence)**.

27. As to **Claims 41,42,44 and 45**, **Mazziotti** teaches: wherein said determination of scheduling data further comprises the steps of:

when a batch is being initiated determining time remaining in a current shift and re-scheduling said batch if said time remaining is less than an estimated time required for processing said batch **(page 855, section 3.1.2)** wherein the scheduling is done around downtimes and off-shift hours.

28. As to **Claims 43 and 46, Mazziotti** teaches: wherein said estimated time required is determined by calculating the sum of the greater of the greatest time of use of items of equipment utilized in processing said batches and minimum possible processing times for processing said batch in accordance with said model data for said items of equipment **(page 856, section 3.2.2)**.

29. As to **Claims 47,48,49, and 51, Mazziotti** teaches: a recording medium storing implementable processor steps, comprising a computer disk **(page 854, section 3)** wherein the data is stored in external files and the simulation is performed on a computer.

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

31. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

32. **Claims 7,8 and 28,29** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mazziotti** as applied to claim 6 and 27 above, and further in view of Gupta et al (U.S. Patent Number 5,260,868), herein referred to as **Gupta**.

33. As to **Claims 7 and 28, Mazziotti** teaches: wherein each of the said items of equipment is associated with a number of processes **(page 855, paragraph 3)**, and the determination of a minimum possible processing time **(page 856, section 3.2.2)**.

34. **Mazziotti** does not expressly teach: said determination of a minimum possible processing time for an item of equipment comprises determining the sum of said specified time periods for said processes of said items of equipment or each of said processes having associated therewith a completion condition, at the least some of said completion conditions comprising the lapse of specified time period in the simulation of a process.

35. **Gupta** teaches the determination of a minimum possible processing time for an item of equipment comprising determining the sum of said specified time periods for said processes of said items of equipment **(column 10, lines 12-26)** since this process reveals machines that are bottleneck machines. Further, **Gupta** teaches each of said processes having associated therewith a completion condition, at the least some of said completion conditions comprising the lapse of specified time period in the simulation of a process **(column 8, lines 19-27)** since the time it takes a process to complete will determine the speed and capacity of the other processes being performed in the machine.

36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the determination of minimum processing time and a completion condition for processes as taught by **Mazziotti** with the determination of the sum of said specified time periods for said processes of said items of equipment and a completion condition for the processes as taught by **Gupta** since **Mazziotti** and **Gupta** are both directed to the simulation of a manufacturing process for the purpose of creating scheduling data and the determinations of the minimum possible processing time for an item of equipment and a completion condition allows the user to determine and avoid bottlenecks in the manufacturing process as taught by **Gupta (column 8, lines 19-27, column 10, lines 12-26).**

37. As to **Claims 8 and 29**, **Mazziotti** teaches: wherein said storage step further comprises associating with at least some of said plurality of processes involving said items of equipment, rate data and said generation of output data comprises for each step in a simulation the steps of:

determining whether any process of said plurality of processes to be simulated is associated with rate data **(Figure 1, "Processing times", page 856, section 3.2.2)**;

determining the minimum time increment required to complete any of the processes currently being simulated **(page 857, column 1, last sentence-column 2, first sentence)**; and

selecting as a step size for generating output data a default step size, if at least one process associated with rate data is to be simulated and said default step size is smaller than said determined minimum time increment **(page 859, Summary, sentence 4)**, and selecting as said step size said determined minimum time increment if no process to be simulated is associated with rate data or said

default step size is greater than said determined minimum time increment **(page 859, Summary, sentence 4)** wherein the step size in the simulation software can be chosen by the user. The user will want to make the step size as small as possible in order to obtain the proper data. Therefore, it would be obvious to choose the step size to be the smaller of the two numbers, in this case, it would be the smaller of the default step size and the minimum time increment.

38. **Claims 10-17, 19,20, 31-37,39 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mazziotti and Gupta** as applied to claims 10 and 31 above, and further in view of Parad (U.S. Patent Number 5,369,570), herein referred to as **Parad**.

39. As to **Claims 10 and 31, Mazziotti and Gupta** teach: wherein said storage step further comprises associating with said at least some of said plurality of processes, utility type data **(Mazziotti: page 857, section 3.4.2, first 2 sentences)** and generating output data associated with said determined step size **(page 859, Summary, sentence 4)**.

40. **Mazziotti and Gupta** do not expressly teach: said generation of output data comprises for steps in a simulation generating output data associated with items of utility type data utilizing rate data associated with a process being simulated.

41. **Parad** teaches generation of output data comprises for steps in a simulation generating output data associated with items of utility type data utilizing rate data associated with a process being simulated **(Figures 3 and 4, column 11, lines 3-5, lines 18-22, 30-34)** and uses this information to create a realistic schedule for a manufacturing process that accurately represents a multitude of resource types including materials **(column 10, lines 40-44, column 12, lines 5-9)** so that it can be determined where resource constraints are violated enabling these conflicts to be resolved before they actually happen and so that bottlenecks in the manufacturing process can be determined an scheduled around so that productivity is maintained **(column 2, lines column 1, line 66-column 2, line 13)**.

42. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the utility type data as taught by **Mazziotti and Gupta** to include the generation of output data associated with items of utility type data utilizing rate data associated with a process being simulated as taught by **Parad** since **Parad** teaches that the generation of output data associated with items of utility type data utilizing rate data associated with a process enables the determination of where resource constraints are violated thereby enabling these conflicts to be resolved before they actually happen and so that bottlenecks in the manufacturing process can be determined an scheduled around so that productivity is maintained **(column 2, lines column 1, line 66-column 2, line 13)**.

43. As to **Claims 11 and 32, Parad** teaches: determination of output data representative of instantaneous demand for a utility corresponding to an item of utility type data utilizing determined sums of rate data associated with said utility type data for processes being simulated **(column 11, lines 3-5).**

44. As to **Claims 12 and 33, Parad** teaches: wherein said generation of output data for steps within a simulation comprises storing in association with items of utility data, quantity data indicative of a current quantity of a utility within a simulation wherein said quantity data is determined utilizing rate data associated with processes being simulated and said determined step size **(column 11, lines 31-33,** "absolute value").

45. As to **Claims 13 and 34, Parad** teaches: wherein said quantity data for a step in a simulation is determined by incrementing or decrementing quantity data associated with utility type data for the previous step in a simulation by the product of said determined step size and the sum of rate data associated with said utility data and processes being simulated **(column 11, lines 61-68).**

46. As to **Claims 14 and 35, Parad** teaches: wherein said storage step further comprises storing in association with said items of utility type data, minimum quantity data and generation rate data, wherein the determination of quantity data associated with an item of utility type data for a step within a simulation comprises the step of incrementing or decrementing quantity data for the previous step in a simulation by the product of said generation rate data and said determined step size if said quantity data is less than said minimum quantity data associated with said utility type **(Figures 3,4 and column 11, lines 61-68).**

47. As to **Claims 15 and 36, Parad** teaches: wherein said storage step further comprises storing in association with said items of utility type data, maximum quantity data wherein the determination of quantity data associated with an item of utility type data for a step within a simulation comprises the step of incrementing or decrementing quantity data for the previous step in a simulation by the product of said generation rate data and said determined step size only when said quantity data associated with said utility type does not exceed said maximum quantity data associated with said utility type **(Figures 3,4 and column 11, lines 61-68).**

48. As to **Claim 16, Parad** teaches: wherein said generated output data associated with utility type data comprises data indicative of the simulated availability of utilities or waste processing capacity **(Figure 3, element 307 and description).**

49. As to **Claims 17 and 37, Mazziotti** teaches: wherein said storage step comprises storing in association with at least some of said plurality of processes, data indicative of a continuation condition

(page 856, section 3.1.3, sentence 3, "from product to product"), and said generation of output data comprises for each step in a
simulation, the steps of:

determining which of said plurality of processes are to be simulated in said step of said simulation **(page 854,section 3.1.1**, first sentence);

determining for processes to be simulated associated with data indicative of a continuation condition whether output data generated for the previous step in said
simulation fulfils the continuation condition defined by said data **(page 856, section 3.1.1, sentences 3-5)** wherein the product continues from one process to another; and

if a continuation condition for a process being simulated is not fulfilled simulating a delay in the continued processing of said process **(page 856, section 3.1.1, sentences 3-5)** wherein the setup time of the process is adjusted based on the set up time necessary to be ready to process the next piece of equipment.

50. As to **Claims 19 and 39**, **Parad** teaches: wherein said data indicative of a continuation condition comprises data defining an equation which quantity data associated with utility type data is to fulfill **(page 857, section 3.4.2, sentence 2)** wherein the determination of whether enough raw materials are needed to make the product determine if the process continues to the next stage if there is a continuation present **(page 856, section 3.1.3, sentence 3)**.

51. As to **Claims 20 and 40**, **Mazziotti** teaches: wherein said storage step comprises storing data in association with each of said plurality of processes indicative of the next processes to be simulated following the completion of each said process **(page 856, section 3.1.3, sentence 3)** wherein said determination of which of said plurality of processes are to be simulated comprises the steps of:

determining for each process simulated in the previous step of a simulation whether the completion condition associated with each said process has been fulfilled **(page 856, section 3.1.1, sentences 3-5)**; and

determining as processes to be simulated processes for which said completion conditions have not been fulfilled and said next processes associated with processes for which said completion conditions have been fulfilled **(page 856, section 3.1.1, sentences 3-5)**.

52. **Claim 50** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Mazziotti** as applied to claim 47 above, and further in view of Chan (U.S. Patent Number 6,466,898) herein referred to as **Chan**.

53. As to **Claim 50, Mazziotti** teaches a recording medium **(page 854, paragraph 2, first sentence).**

54. **Mazziotti** does not expressly teach the recording medium comprising an electric signal transferred via the internet.

55. **Chan** teaches a simulation system in which electrical signals are transferred over the internet so that simulations can be run on remote machines on a network **(column 13, lines 7-28)** since general purpose workstations and personal computers need a much larger amount of time to simulate large and complex designs **(column 1, lines 59-64)** and a network based simulation method will enable a designer to make full use of network resources to perform simulation **(column 3, lines 41-44).**

56. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the recording medium as taught in Mazziotti to comprise and electrical signal transferred over the internet as taught by Chen since Chen teaches that since general purpose workstations and personal computers need a much larger amount of time to simulate large and complex designs **(column 1, lines 59-64)** and a network based simulation method will enable a designer to make full use of network resources to perform simulation **(column 3, lines 41-44)**, thereby, speeding up the processing time for the simulation.

Conclusion

57. The prior art made of record, see PTO 892, and not relied upon is considered pertinent to applicant's disclosure, careful consideration must be given prior to Applicant's response to this Office Action.

58. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C Hogan whose telephone number is 571-272-3712. The examiner can normally be reached on 7:30AM-5PM Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (571)272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary C Hogan

Examiner

Art Unit 2123